EFFECT OF MALATHION ON PROTEIN LEVEL OF FRESH WATER FISH OPHIOCEPHALUS STRIATUS

Gijare, S. S.[1], V.T. Tantarpale[2]
Jagadamba Mahavidyalaya Achalpur, Vidyabharati Mahavidyalaya Camp Amravati

ABSTRACT
Malathion is commonly used insecticide for agricultural and non agricultural purpose in India. The protein level in muscle and liver of fresh water fish *Ophiocephalus striatus* was studied after exposure to sublethal concentration of malathion . There is significant decreased in protein level in muscle and liver in treated group compared with control.
Keywords: Malathion, Aquarium, Pesticides.

IINTRODUCTION

Pesticides are widely used substances in agriculture practices. The use of pesticides has resulted in increased crop production and has raised concerns about potential adverse effects on the environment and human health. In the dry season, pesticides are known to cause serious environmental problems because during this period, the dilution capacity of water system is low and thus increasing the risk of high concentrations of toxic chemicals,[1].
Aquatic ecosystems that run through agricultural areas have high probability of being contaminated by runoff and ground water leaching by a variety of chemicals. Pesticides are used tremendously, which on entering the aquatic environment lead toxic effects on aquatic organisms and alters biochemical changes in aquatic organisms.

Deliberate or accidental contamination of ponds by widely utilized organophosphorous (OP) insecticides such as malathion is a potential problem for aquaculture in tropical countries. The pesticide, on reaching to aquatic systems, greatly influences the non target organisms such as fish. Among aquatic organisms fishes are the main and best source of food, so it is essential to secure the health of fishes [2].

Bio chemicals are the accessible body contents for checking the toxicity of any chemical [3]. The results of such biochemical parameters results in serious outcome in the form of various diseases in fishes.

In present investigation attempt has been made to study effect of malathion on protein level in liver and muscle of *Ophiocephalus striatus.*

II MATERIALS AND METHODS

The fish*Ophiocephalus striatus* were collected from Wadali lake near Amravati region and brought to laboratory . Fishes were acclimatized to laboratory conditions for two weeks in aquarium. The fish having 12-30 cm length, 13-25g weight were selected for experiment .After the normal process of acclimatization and washing a group of six fishes were transferred to another aquarium containing sublethal concentration of malathion for predetermined exposure at 24, 48, 72 and 96hr. The fishes were scarified and fresh tissue was isolated.

Proteins were estimated according to the method of Lowry[4]. Folin phenol was used as a reagent and bovine serum albumin as the standard .

III RESULTS AND DISCUSSION

Protein

There was reduction in protein contents in liver of the fish *Ophiocephalus striatus* at the early period of treatment for the sublethal concentration of malathion as compared to the control value. But at the 72 hrs. Protein contents significantly rise and then decrease 68.65,67.23, 68.36, 64.22.

There was increase protein contents of muscle up to 24 hrs. Tremendously. But then after 24hrs. of exposure protein contents gradually decrease upto the end of experimental period 79.31, 76.39, 73.26, 69.18 for sublethal concentration of malathion exposed to freshwater fish *Ophiocephalus striatus* .

Fig.1 : Change in the liver protein of the fresh water fish *Ophiocephalus striatus* exposed to sublethal concentration of malathion at different time intervals.

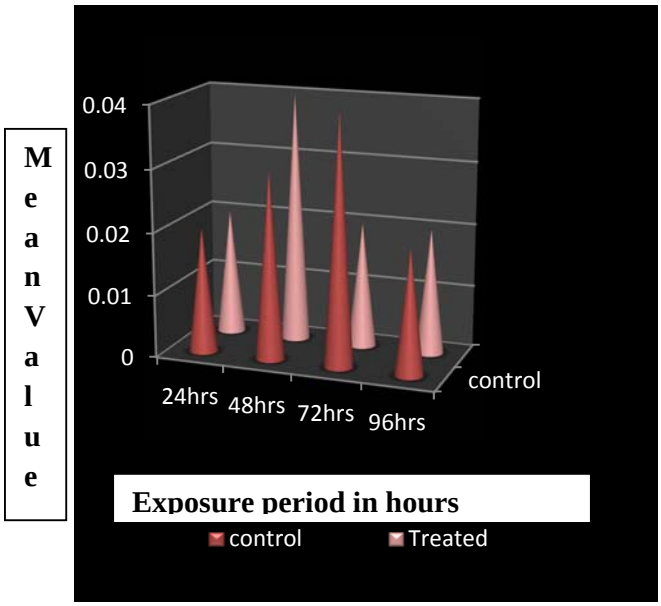
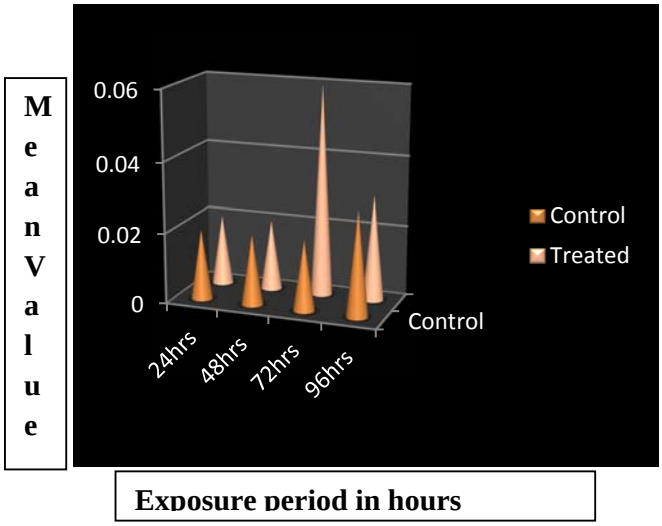


Fig.2 : Change in the Muscle protein of the fresh water fish *Ophiocephalus striatus* exposed to sublethal concentration of malathion at different time intervals.



DISCUSSION

The total proteins in liver showed decline initiating protein breakdown, whereas in muscle there was slight increase in protein content in the fish exposed to sublethal concentration of malathion. Sevaral observations support the present result. There was decrease in the protein content in liver of *Glossogobius giuris* [5]. . The changes in protein content in the muscle of the fish Tilapia mossambica exposed to sublethal concentration of monochrotophos.[6]. Decrease in protein content of fresh water fish Channa punctataus exposed to fenvalerate.[7].

IV CONCLUSION

In the present study there was decrease in the protein content in the muscle and liver of *Ophiocephalus striatus* due to decrease in the protein synthesis.

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